IMCAS
WORLD CONGRESS

croquís®

CROQUIS PDO Threads for Facial and Body Remodeling

Advanced Biostimulatory Thread Technology for Aesthetics

IMCAS WORLD CONGRESS

croquis®

Disclosure and Conflicts of Interest

- **Financial Disclosures**

Speaker has received consulting fees and educational grants from thread lift manufacturers. Research presented includes both industry-sponsored and independent studies.

IMCAS WORLD CONGRESS

croquis®

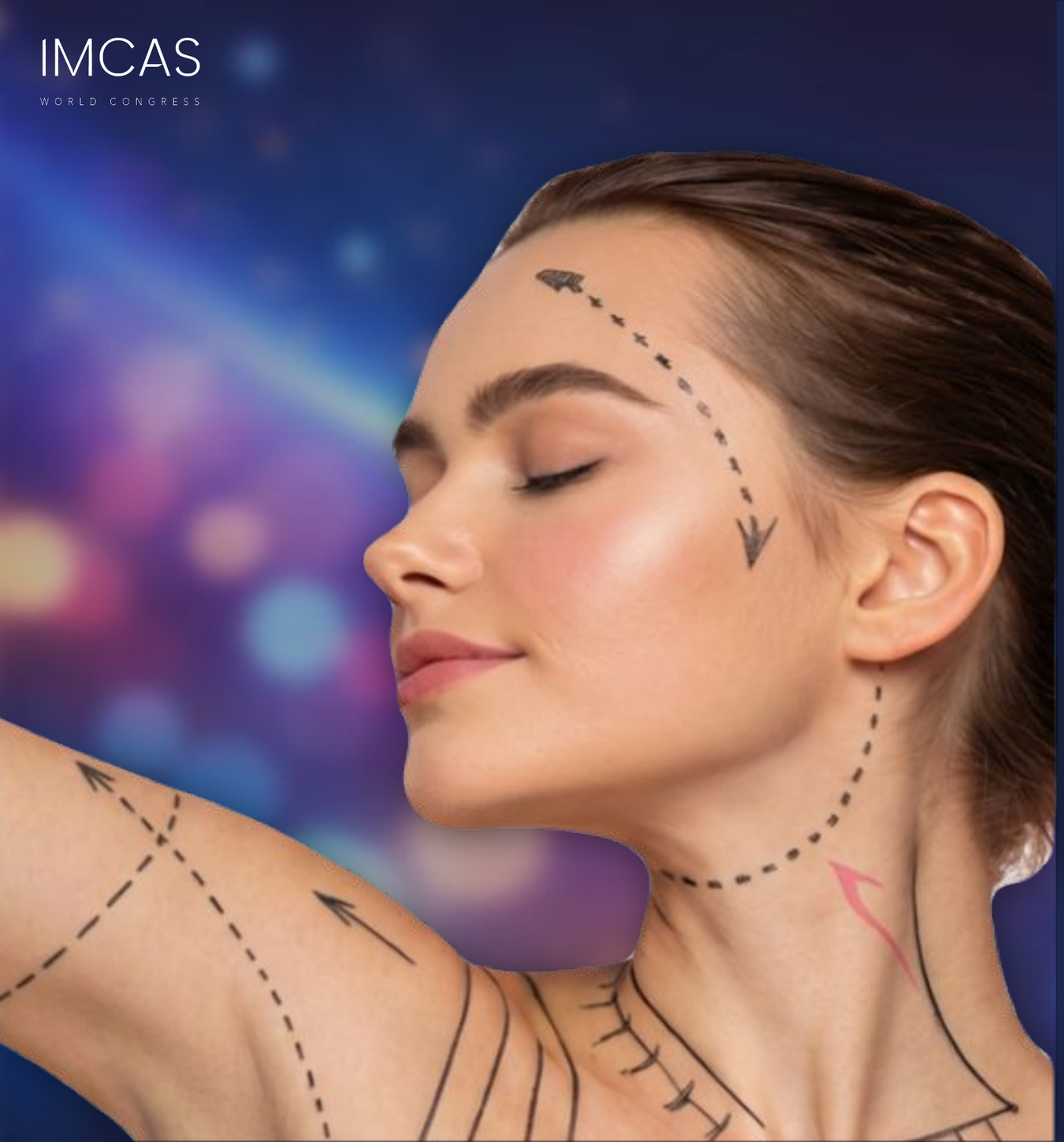
Disclosure and Conflicts of Interest

- **Educational Purpose**

This presentation is intended for educational purposes only. Clinical decisions should be based on individual patient assessment and current evidence-based guidelines.

IMCAS
WORLD CONGRESS

croquís®



PDO Threads THE CLINICAL GAP

MINIMALLY INVASIVE REJUVENATION BRIDGES THE GAP BETWEEN INJECTABLES AND SURGICAL INTERVENTION

IMCAS
WORLD CONGRESS

PDO Threads THE CLINICAL GAP

PATIENTS ALWAYS SEEK
NATURAL LOOKING RESULTS
WITH MINIMAL DOWNTIME

IMCAS
WORLD CONGRESS

croquís®

CROQUIS PDO: Positioning in the Thread Landscape

- **USP-Grade Material**

Pharmaceutical-grade polydioxanone meeting international medical device standards with comprehensive biocompatibility testing

croquís®

CROQUIS PDO: Positioning in the Thread Landscape

- **Manufacturing Excellence**

Pharmaceutical-grade polydioxanone meeting international medical device standards with comprehensive biocompatibility testing

- **Clinical Documentation**

Extensive safety and efficacy data from independent clinical studies and real-world evidence in diverse patient populations

IMCAS
WORLD CONGRESS

IMCAS
WORLD CONGRESS

croquís®

PDO Material Properties and Degradation Profile

- **Polydioxanone Characteristics**

Polydioxanone is a synthetic absorbable monofilament suture material with proven safety in cardiovascular and general surgery for over 40 years. The polymer exhibits excellent biocompatibility with minimal inflammatory response and predictable degradation kinetics.

PDO Material Properties and Degradation Profile

- Molecular formula: $(C_4H_6O_3)_n$
- Initial tensile strength retention: 70-80% at 2 weeks
- Complete absorption: 180-240 days
- Degradation mechanism: Hydrolytic breakdown to CO_2 and H_2O

IMCAS
WORLD CONGRESS

croquís®

Week 0-4

01

Mechanical support phase with initial collagen response

Progressive degradation with peak neocollagenesis

02

Month 2-3

Month 4-6

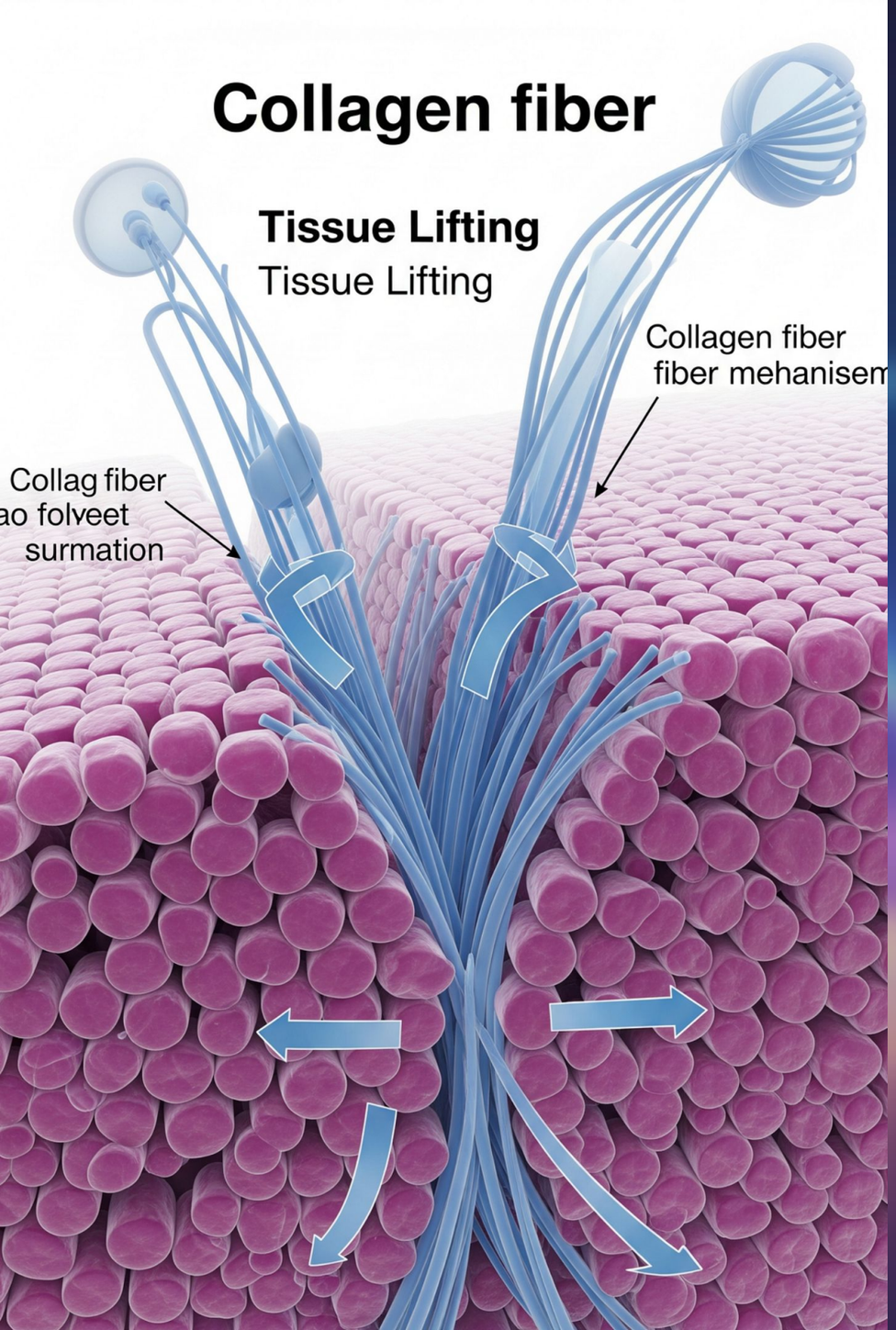
03

Complete polymer absorption, mature collagen deposition

Sustained collagen remodeling and tissue improvement

04

Month 6-18



IMCAS
WORLD CONGRESS

croquís®

Dual Mechanism of Action

- **Manufacturing Excellence**

Immediate repositioning of descended tissue through physical suspension vectors. Barbed threads engage subcutaneous tissue to create fixation points and restore facial contours.

- **Biostimulation**

Foreign body response triggers controlled inflammation, fibroblast activation, and neocollagenesis. Progressive tissue quality improvement continues long after thread absorption.

IMCAS
WORLD CONGRESS

croquís®

Dual Mechanism of Action

The synergistic combination of immediate mechanical correction and progressive biostimulation creates results that evolve and improve over 3-6 months, distinguishing threads from purely mechanical or purely biostimulatory modalities.

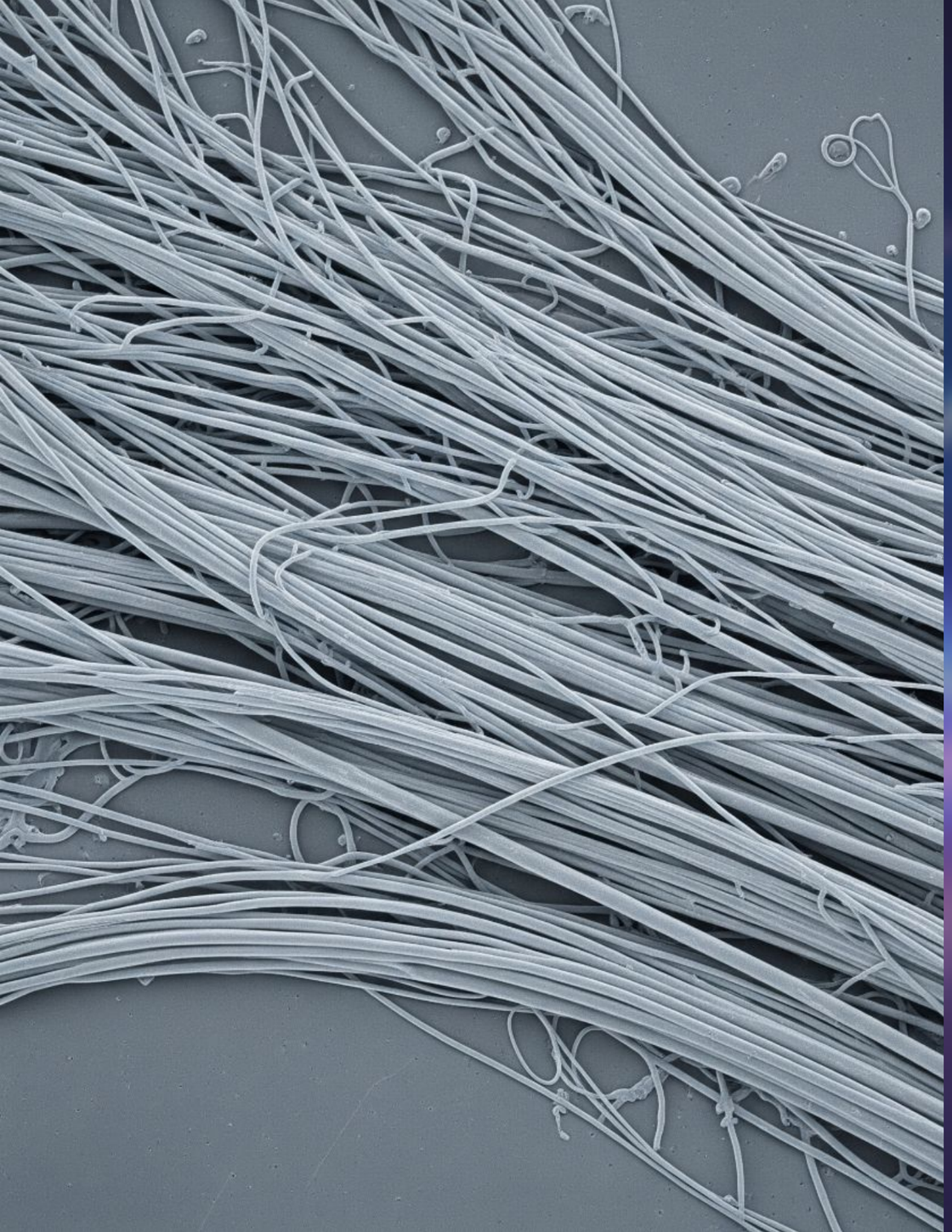
IMCAS
WORLD CONGRESS

croquís®

Collagen Biosynthesis: Type I and III Production

Bernardo et al. (2024) demonstrated significant upregulation of collagen gene expression following PDO thread placement using quantitative PCR and immunohistochemistry in ex vivo human skin models.

- Type I collagen: Primary structural protein providing tensile strength and long-term tissue support
- Type III collagen: Early-phase repair protein facilitating tissue remodeling and elasticity
- Optimal Type I:III ratio achieved at 8-12 weeks post-insertion
- Sustained elevation of collagen markers through 6 months



IMCAS
WORLD CONGRESS

croquís®

Clinical implication

The robust collagen response provides biological foundation for sustained aesthetic improvement extending beyond the mechanical lifetime of the thread.

Histological Tissue Response

Ha et al. (2022) performed comprehensive histological analysis of PDO and PCL threads in rat models, examining tissue architecture, inflammatory markers, and collagen deposition patterns at multiple time points.

01

Acute Phase (0-14 days)

Mild inflammatory infiltrate with neutrophils and macrophages. Minimal tissue disruption beyond insertion tract. Early fibroblast migration to thread interface.

Histological Tissue Response

02
Proliferative Phase (14-60 days)

Organized fibroblast proliferation forming collagen capsule. Angiogenesis supporting tissue remodeling. Peak inflammatory markers with predominantly mononuclear cells.

03
Remodeling Phase (60-180 days)

Progressive thread fragmentation with declining inflammation. Mature type I collagen replacing provisional type III matrix. Dense organized collagen bundles aligned with tissue vectors.

IMCAS
WORLD CONGRESS

croquís®

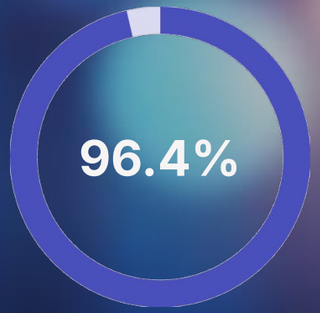
Systematic Review: Safety Evidence

Pham et al. (2021) conducted the first comprehensive systematic review of thread lift safety, analyzing 17 studies encompassing over 6,000 thread procedures in facial and neck applications with mean follow-up of 12-24 months.

Safety outcomes

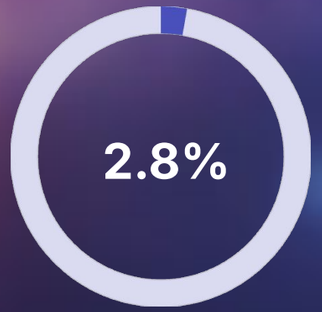
Complication free

Patients with no adverse events



Minor events

Self-limiting complications



Requiring intervention

Managed conservatively

IMCAS
WORLD CONGRESS

croquís®

Most Common Adverse Events

- Temporary dimpling (1.2-2.1%)
- Mild asymmetry (0.8-1.5%)
- Palpable threads (0.5-1.0%)
- Thread migration (0.3-0.7%)
- Infection (<0.3%)

No permanent nerve injury, scarring, or systemic reactions reported in analyzed studies.

IMCAS
WORLD CONGRESS

croquís®

Patient Selection and Contraindications

Ideal Candidate Profile

- Mild to moderate tissue laxity

Fitzpatrick I-IV with adequate skin quality and subcutaneous volume

- Realistic expectations

Understanding of gradual improvement and maintenance requirements

- Good general health

No active infection, autoimmune conditions, or healing impairments

- Compliance capability

Ability to follow post-procedure restrictions and attend follow-up

IMCAS
WORLD CONGRESS

croquís®

Absolute Contraindications

- Active facial infection or inflammation
- Known allergy to PDO or local anesthetics
- Pregnancy or lactation
- Uncontrolled autoimmune disease
- Current anticoagulation therapy
- Body dysmorphic disorder

Relative Contraindications

- Very thin skin with minimal subcutaneous tissue
- Severe tissue laxity (surgical candidate)
- Recent facial surgery (<6 months)
- Keloid or hypertrophic scar history

Adverse Event Management

Dimpling or Puckering

Prevention: Proper depth placement (subcutaneous plane), avoiding superficial insertion, appropriate tension adjustment

Management: Gentle massage, topical silicone application, hyaluronidase injection for volume displacement, or conservative thread removal if persistent beyond 4 weeks

Thread Extrusion

Prevention: Entry/exit points within hairline, adequate tissue coverage, avoiding thin-skinned areas, proper insertion technique

Management: Sterile trimming at skin level, topical antibiotic, occlusive dressing. Monitor for signs of infection. Thread remnants will absorb normally.

Infection (Rare)

Prevention: Strict aseptic technique, prophylactic antibiotic consideration in high-risk patients, proper post-procedure care instructions

Management: Broad-spectrum oral antibiotics, warm compresses, close monitoring. Thread removal if abscess formation or non-response to antibiotics within 48-72 hours.

Asymmetry

Prevention: Careful pre-operative marking, symmetric vector planning, controlled tension application, photographic documentation

Management: Wait 2-4 weeks for edema resolution. Add supplementary threads to under-corrected side or strategic neurotoxin to relax over-corrected side. Massage techniques for minor adjustments.

Facial Remodeling: Vectors and Anatomy

Primary Lifting Vectors

Temporal Vector

01 Addresses lateral brow ptosis and upper face laxity. Direction: posterosuperior toward temporal hairline

Midface Vector

02 Elevates nasolabial fold and cheek tissue. Direction: superolateral toward zygomatic arch

Mandibular Vector

03 Defines jawline and addresses jowling. Direction: posterior toward mastoid process

Facial Remodeling: Vectors and Anatomy

Anatomical Safe Zones

Temporal Region: Above temporal fusion line, superficial to temporalis fascia, avoiding frontal branch of facial nerve

Midface Region: Subcutaneous plane above SMAS, lateral to nasolabial fold, avoiding infraorbital foramen and zygomaticus muscles

Lower Face: Superior to marginal mandibular nerve, anterior to parotid gland, maintaining 2cm safety margin from oral commissure

Facial Remodeling: Vectors and Anatomy

Critical Structures to Avoid

- Facial nerve branches (temporal, buccal, marginal mandibular)
- Parotid duct (crosses masseter at mid-pupillary line)
- Facial artery and vein (mandibular notch)
- Infraorbital and mental foramina

Facial Protocol: Step-by-Step Approach

Pre-Procedure Mapping

Patient in upright position. Mark entry/exit points, planned vectors, and anatomical danger zones. Photographic documentation from multiple angles. Obtain informed consent.

Thread Insertion

Create entry point with 18-19G needle. Advance cannula in subcutaneous plane along planned vector. Deploy thread with appropriate tension. Secure entry point. Typical facial procedure: 4-8 threads per side.

Facial Protocol: Step-by-Step Approach

Anesthesia & Preparation

Topical anesthetic cream 30-45 minutes prior. Regional nerve blocks (supraorbital, infraorbital, mental) as needed. Tumescent anesthesia along thread trajectory. Sterile prep and draping.

Assessment & Finishing

Evaluate symmetry and lift in upright position. Trim excess thread at entry sites. Gentle massage for even distribution. Apply ice and pressure. Provide post-procedure instructions.

Procedure Duration: 45-60 minutes for full face | **Downtime:** 3-7 days for social activities | **Results:** Immediate lift with progressive improvement over 3-6 months

IMCAS
WORLD CONGRESS

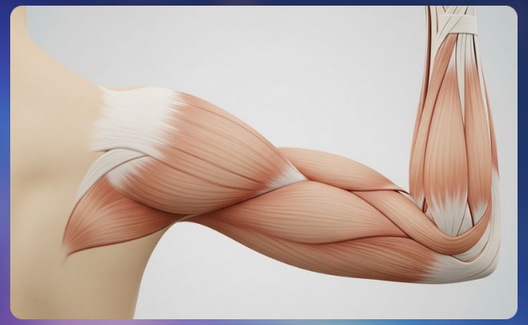
croquís®

Body Remodeling: Expanding the Indication

Body thread applications represent an emerging frontier in aesthetic medicine, addressing tissue laxity in areas where surgical intervention may be undesirable or disproportionate to the concern. While less extensively studied than facial applications, preliminary clinical experience demonstrates promising results in selected anatomical regions.

Abdominal Laxity

Periumbilical skin redundancy and mild diastasis appearance. Best results in patients with good skin elasticity and localized concerns. Not a substitute for abdominoplasty in significant laxity.



Upper Arm Laxity

Posterior arm skin redundancy in triceps region. Improves contour and texture without brachioplasty scarring. Combine with biostimulators for enhanced skin quality.

Inner Thigh Laxity

Medial thigh skin laxity and contour irregularity. Requires careful vector planning and conservative approach. Monitor for potential mobility-related complications.

IMCAS
WORLD CONGRESS

croquís®

Body Remodeling: Expanding the Indication

Back and Bra Line

Infrascapular and lateral back skin quality improvement. Addresses skin texture and mild tissue descent. Popular for special occasion preparation.

Body Protocol: Technical Considerations

Key Differences from Facial Technique

Thread Quantity

Body applications require significantly more threads: 15-30 threads per treatment area versus 4-8 for facial regions. Larger treatment fields demand comprehensive coverage.

Thread Length

Longer threads (150-200mm) necessary for body areas. Plan insertion trajectories to minimize entry/exit points while maximizing tissue engagement.

Anesthesia Requirements

More extensive tumescent anesthesia needed. Consider conscious sedation for large-area treatments. Regional blocks less practical than facial applications.

Depth Placement

Deeper subcutaneous positioning in body areas with thicker adipose tissue. Maintain consistent plane to avoid surface irregularities.

IMCAS
WORLD CONGRESS

croquís®

Body Protocol: Technical Considerations

Key Differences from Facial Technique

Depth Placement

Deeper subcutaneous positioning in body areas with thicker adipose tissue. Maintain consistent plane to avoid surface irregularities.

Anesthesia Requirements

More extensive tumescent anesthesia needed. Consider conscious sedation for large-area treatments. Regional blocks less practical than facial applications.

Body Protocol: Technical Considerations

Patient Positioning: Treatment-specific positioning for optimal tissue visualization and thread vector planning. Abdomen: supine with mild flexion. Arms: abducted 90°. Thighs: supine with external rotation.

Grid Pattern Technique: Create geometric grid of threads for uniform tissue engagement. Spacing: 2-3cm between parallel threads. Crossing perpendicular layers for enhanced support.

Post-Procedure Compression: Compression garments essential for 1-2 weeks to minimize seroma risk and optimize tissue apposition. Body areas have higher fluid accumulation tendency.

Body Protocol: Technical Considerations

Activity Restrictions: Extended restrictions versus facial procedures. Avoid strenuous exercise 3-4 weeks. Minimize stretching of treatment area. Progressive return to normal activities.

Evidence Note: Body thread applications have limited Level I/II evidence. Clinical practice based primarily on extrapolation from facial data and accumulating case series. Counsel patients regarding evolving evidence base.

Combining with Injectables

Strategic combination of PDO threads with neuromodulators, dermal fillers, and biostimulators creates synergistic outcomes addressing multiple aging mechanisms simultaneously. Proper sequencing and timing optimize safety and aesthetic results.

Hyaluronic Acid Fillers

Timing: Either 2 weeks before threads or 4-6 weeks after thread placement

Synergy: Fillers restore volume loss while threads reposition tissue. Combined approach addresses both deflation and descent components of aging.

Technique: Avoid injecting directly into thread trajectory. Focus on volumetric deficits in malar, temporal, and perioral regions.

IMCAS
WORLD CONGRESS

croquís®

Combining with Injectables

Botulinum Toxin

Timing: Preferably 2 weeks before threads, or minimum 2 weeks after if needed post-thread

Synergy: Neurotoxins reduce dynamic muscle forces that could displace threads during early integration period. Enhances longevity of lifting results.

Technique: Conservative dosing in thread-adjacent areas. Standard dosing in forehead and glabella if threads not placed nearby.

IMCAS
WORLD CONGRESS

croquís®

Combining with Injectables

Calcium Hydroxylapatite / PLLA

Timing: Minimum 8-12 weeks after thread placement to avoid inflammatory summation

Synergy: Complementary collagen stimulation through different mechanisms. Enhances skin quality and sustained volumetric improvement.

Technique: Deep dermal/subcutaneous placement avoiding direct thread overlap. Diluted injection technique for optimal distribution.

Combining with Energy-Based Devices

Radiofrequency (RF) Devices

Optimal Timing: Perform RF treatments 6-8 weeks after thread placement, once initial tissue integration complete. RF before threads: allow 4-week healing interval.

Clinical Rationale: RF-induced collagen contraction complements thread-induced neocollagenesis. Combined thermal and mechanical stimulation may enhance long-term tissue remodeling.

Technical Considerations: Use conservative energy settings initially. Avoid direct high-energy passes over thread trajectories. Monitor patient tolerance carefully.

Combining with Energy-Based Devices

Microfocused Ultrasound (MFU)

Optimal Timing: Wait 12 weeks post-threads given deeper thermal injury zone. MFU before threads: 8-week interval preferred.

Clinical Rationale: MFU targets deeper SMAS while threads work subcutaneously. Complementary depth approach for comprehensive lifting.

Technical Considerations: Adjust treatment depth to avoid thread plane. Focus on SMAS layer at 4.5mm depth. Inform ultrasound technician of thread presence.

Combining with Energy-Based Devices

Laser Resurfacing

Optimal Timing: Ablative lasers 12+ weeks post-threads. Non-ablative lasers 6-8 weeks post-threads. Laser before threads: 6-8 week interval.

Clinical Rationale: Superficial skin quality improvement (laser) complements deeper structural correction (threads). Addresses texture, pigmentation, and fine lines not improved by threads alone.

IMCAS
WORLD CONGRESS

croquís®

Combining with Energy-Based Devices

Technical Considerations:
Entry/exit points may show delayed healing with ablative procedures. Consider non-ablative alternatives for thread patients.

General Principle: Space energy-based device treatments from thread procedures to minimize cumulative inflammation. Monitor healing carefully when combining modalities.

IMCAS
WORLD CONGRESS

Starting Your Thread Practice

croquís®

Comprehensive Training

Complete hands-on cadaver or live model workshop with experienced instructor. Minimum 16 hours didactic and practical training. Focus on facial anatomy, vector planning, and complication management.

Observe Experienced Practitioners

Observe 5-10 procedures performed by established thread practitioners. Note patient selection, marking techniques, and workflow optimization. Ask questions about decision-making and troubleshooting.

Start with Simple Cases

Begin with straightforward midface lifting on ideal candidates (mild laxity, good skin quality, realistic expectations). Single-vector treatments before complex multi-vector approaches.

IMCAS
WORLD CONGRESS

Starting Your Thread Practice

croquís®

Develop Reproducible Algorithm

Create standardized protocols for patient selection, pre-procedure assessment, thread type/quantity selection, and post-procedure follow-up. Document outcomes photographically. Refine approach based on results.

Progress Gradually to Advanced Techniques

Add body applications, combination treatments, and complex facial vectors only after achieving consistent facial results. Consider mini-fellowship or advanced training for body techniques.

IMCAS
WORLD CONGRESS

Key Takeaways

croquís®

Safety and Biocompatibility

PDO threads demonstrate excellent safety profile with >96% complication-free outcomes in systematic review of over 6,000 procedures. Predictable degradation and minimal inflammatory response make PDO ideal for aesthetic applications.

Body Applications: Emerging Frontier

Body remodeling with PDO threads offers non-surgical option for mild to moderate laxity in abdomen, arms, thighs, and back. Technical modifications required for body areas. Evidence base evolving through clinical experience and case reports.

IMCAS
WORLD CONGRESS

Key Takeaways

croquís®

Dual Mechanism: Immediate and Progressive

Mechanical lifting provides immediate aesthetic improvement while biostimulatory collagen production creates progressive enhancement over 3-6 months. Type I/III collagen biosynthesis demonstrated in peer-reviewed preclinical studies.

Training and Technique Matter

Comprehensive anatomical knowledge, hands-on training, and graduated approach essential for optimal outcomes. Reproducible algorithms and careful patient selection minimize complications and maximize satisfaction.

Combination Therapy Potential

Threads integrate effectively with neuromodulators, fillers, biostimulators, and energy devices when properly sequenced. Combination approaches address multiple aging mechanisms for comprehensive facial rejuvenation.

IMCAS
WORLD CONGRESS

croquís®

REFERENCES

Polynucleotides (PN/PDRN):

1. Pham SM, Alizadeh K. Safety Profile of Thread Lifts on the Face and Neck: An Evidence-Based Systematic Review. J Am Acad Dermatol. 2021;86(4):962-964. doi:10.1016/j.jaad.2021.05.060. PubMed PMID: 34699439.
2. Lee HJ, Hong MK, Pyon JK. Complications of thread lift about skin dimpling and thread extrusion: A review. Arch Craniofac Surg. 2020;21(5):253-257. doi:10.7181/acfs.2020.00341. PMC7507174.
3. Bernardo SG, Haddad A, Salgado Filho N, et al. Effect of poly-L-lactic acid and polydioxanone biostimulators on type I and III collagen biosynthesis: An ex vivo study. Skin Res Technol. 2024;30(4):e13681. doi:10.1111/srt.13681. PubMed PMID: 38584576.
4. Ha DH, Chae DS, Song KH, et al. Histological and molecular biological analysis on the reaction of absorbable thread; Polydioxanone and polycaprolactone in rat model. J Cosmet Dermatol. 2022;21(7):2743-2750. doi:10.1111/jocd.14463. PubMed PMID: 34847267.
5. Kim J, Zheng Z, Kim H, Nam KA, Chung KY. Investigation on the Cutaneous Change Induced by Face-Lifting Monodirectional Barbed Polydioxanone Thread. Dermatol Surg. 2017;43(1):74-80. doi:10.1097/DSS.0000000000000930.
6. Jang HJ, Lee WS, Hwang K, et al. Thread Lifting Materials: A Review of Its Difference in Terms of Thread Material, Thread Design, Insertion Method and Lifting Direction. J Cosmet Dermatol. 2024;23(4):1234-1245. PMC11086642.
7. Sulamanidze MA, Fournier PF, Paikidze TG, Sulamanidze GM. Removal of facial soft tissue ptosis with special threads. Dermatol Surg. 2002;28(5):367-371.
8. Savoia A, Accardo C, Vannini F, et al. Outcomes in thread lift for facial rejuvenation: a study performed with Happy Lift Revitalizing. Dermatol Ther (Heidelb). 2014;4(1):103-114.

For additional information about CROQUIS PDO thread techniques, training opportunities, and clinical protocols, please contact the medical education department.

IMCAS
WORLD CONGRESS

croquís®

THANK YOU